IN THE CLAIMS:

Please cancel Claims 1 to 3 and 6 to 23 without prejudice or disclaimer of subject matter, amend Claims 4 and 5, and add new Claims 24 to 28 as shown below. The claims, as pending in the subject application, now read as follows:

1. to 3. (Canceled)

4. (Currently amended) The method according to claim 24 [[1]], wherein the grid positions corresponding to each dimension ~~of the components~~ are set the same.

5. (Currently amended) The method according to claim 24 [[1]], wherein the input ~~image~~ data is expressed in one of RGB, CMY, and XYZ color spaces.

6. to. 23.

24. (New) A method of converting three-dimensional input data representing an image by using a three-dimensional look-up table having rectangularly spaced grid points, grid positions of the three-dimensional look-up table having non-uniform intervals, the method comprising the step of performing interpolation processing using four grid points in eight grid points (P000 = P(X0, Y0, Z0), P001 = P(X0, Y0, Z1), P010 = (X0, Y1, Z0), P011 = P(X0, Y1, Z1), P100 = P(X1, Y0, Z0), P101 = P(X1, Y0, Z1), P110 = P(X1, Y1, Z0), P111 = P(X1, Y1, Z1)) of a unit rectangular hexahedron which includes an input data value (X, Y, Z where $X0 \leq X \leq X1$, $Y0 \leq Y \leq Y1$, $Z0 \leq Z \leq Z1$), wherein the interpolation processing comprises the steps of:

obtaining weight values (u', v', w'), based on the input data value (X, Y, Z), wherein the weight values are expressed as follows:

$$u' = INT(((X-X0)/(X1-X0))L),$$

$$v' = INT(((Y-Y0)/(Y1-Y0))L),$$

$$w' = INT(((Z-Z0)/(Z1-Z0))L),$$

where a value of a predetermined constant (L) is greater than each of the grid intervals (X1-X0, Y1-Y0, Z1-Z0) of the three-dimensional look-up table, and is a power of 2;

determining a relationship among the weight values (u', v', w'); and

calculating an output data value (P) for the input data value by tetrahedral interpolation using the output values for the four grid points and the weight values, based on determining result by the following equations:

when u'>v'>w', P=((L-u')P000+(u'-v')P100+(v'-w')P110+w'P111)/L,

when u'>w'=v', P=((L-u')P000+(u'-w')P100+(w'-v')P110+v'P111)/L,

when w'=u'>v', P=((L-w')P000+(w'-u')P001+(u'-v')P101+v'P111)/L,

when w'=v'=u', P=((L-w')P000+(w'-v')P001+(v'-u')P011+u'P111)/L,

when v'>w'=u', P=((L-v')P000+(v'-w')P010+(w'-u')P011+u'P111)/L,

when v'=u'>w', P=((L-v')P000+(v'-u')P010+(u'-w')P110+w'P111)/L.

25. (New) The method according to claim 24, further comprising the steps of:

setting grid positions of the tree-dimensional look-up table; and

generating X-u', Y-v', and Z-w' tables to obtain the weight values (u', v', w') in the obtaining step.

26. (New) A data conversion apparatus for performing image processing on three-dimensional input data representing an image by using a three-dimensional look-up table having rectangularly spaced grid points, grid positions of the three-dimensional look-up table having non-uniform intervals, said apparatus comprising a processor arranged to perform interpolation processing using four grid points in eight grid points (P000 = P(X0, Y0, Z0), P001 = P(X0, Y0, Z1), P010 = (X0, Y1, Z0), P011 = P(X0, Y1, Z1), P100 = P(X1, Y0, Z0), P101 = P(X1, Y0, Z1), P110 = P(X1, Y1, Z0), P111 = P(X1, Y1, Z1)) of a unit rectangular hexahedron which includes an input data value (X, Y, Z where $X0 \leq X \leq X1$, $Y0 \leq Y \leq Y1$, $Z0 \leq Z \leq Z1$), wherein said processor comprises:

an obtainer, arranged to obtain weight values (u', v', w'), based on the input data value (X, Y, Z), wherein the weight values are expressed as follows:

$$u' = INT(((X-X0)/(X1-X0))L),$$

$$v' = INT(((Y-Y0)/(Y1-Y0))L),$$

$$w' = INT(((Z-Z0)/(Z1-Z0))L),$$

where a value of a predetermined constant (L) is greater than each of the grid intervals (X1-X0, Y1-Y0, Z1-Z0) of the three-dimensional look-up table, and is a power of 2;

a determiner, arranged to determine a relationship among the weight values (u', v', w'); and

a calculator, arranged to calculate an output data value (P) for the input data value by tetrahedral interpolation using the output values for the four grid points and the weight values, based on determining result by the following equations:

when u'>v'>w', P=((L-u')P000+(u'-v')P100+(v'-w')P110+w'P111)/L,

when u'>w'=v', P=((L-u')P000+(u'-w')P100+(w'-v')P110+v'P111)/L,

when w'=u'>v', P=((L-w')P000+(w'-u')P001+(u'-v')P101+v'P111)/L,

when w'=v'=u', P=((L-w')P000+(w'-v')P001+(v'-u')P011+u'P111)/L,

when v'>w'=u', P=((L-v')P000+(v'-w')P010+(w'-u')P011+u'P111)/L,

when v'=u'>w', P=((L-v')P000+(v'-u')P010+(u'-w')P110+w'P111)/L.

27. (New) A computer readable medium storing a computer program for a method of converting three-dimensional input data representing an image by using a three-dimensional look-up table having rectangularly spaced grid points, grid positions of the three-dimensional look-up table having non-uniform intervals, the method comprising the step of performing interpolation processing using four grid points in eight grid points (P000 = P(X0, Y0, Z0), P001 = P(X0, Y0, Z1), P010 = (X0, Y1, Z0), P011 = P(X0, Y1, Z1), P100 = P(X1, Y0, Z0), P101 = P(X1, Y0, Z1), P110 = P(X1, Y1, Z0), P111 = P(X1, Y1, Z1)) of a unit rectangular hexahedron which includes an input data value (X, Y, Z where $X0 \leq X \leq X1$, $Y0 \leq Y \leq Y1$, $Z0 \leq Z \leq Z1$), wherein the interpolation processing comprises the steps of:

obtaining weight values (u', v', w'), based on the input data value (X, Y, Z), wherein the weight values are expressed as follows:

u' = INT(((X-X0)/(X1-X0))L),

v' = INT(((Y-Y0)/(Y1-Y0))L),

w' = INT(((Z-Z0)/(Z1-Z0))L),

where a value of a predetermined constant (L) is greater than each of the grid intervals (X1-X0, Y1-Y0, Z1-Z0) of the three-dimensional look-up table, and is a power of 2;

determining a relationship among the weight values (u', v', w'); and

calculating an output data value (P) for the input data value by tetrahedral interpolation using the output values for the four grid points and the weight values, based on determining result by the following equations:

when u'>v'>w', P=((L-u')P000+(u'-v')P100+(v'-w')P110+w'P111)/L,

when u'>w'=v', P=((L-u')P000+(u'-w')P100+(w'-v')P110+v'P111)/L,

when w'=u'>v', P=((L-w')P000+(w'-u')P001+(u'-v')P101+v'P111)/L,

when w'=v'=u', P=((L-w')P000+(w'-v')P001+(v'-u')P011+u'P111)/L,

when v'>w'=u', P=((L-v')P000+(v'-w')P010+(w'-u')P011+u'P111)/L,

when v'=u'>w', P=((L-v')P000+(v'-u')P010+(u'-w')P110+w'P111)/L.

28. (New) A computer program stored on a computer readable medium comprising program code for a method of converting three-dimensional input data representing an image by using a three-dimensional look-up table having rectangularly spaced grid points, grid positions of the three-dimensional look-up table having non-uniform intervals, the method comprising the step of performing interpolation processing using four grid points in eight grid points (P000 = P(X0, Y0, Z0), P001 = P(X0, Y0, Z1), P010 = (X0, Y1, Z0), P011 = P(X0, Y1, Z1), P100 = P(X1, Y0, Z0),
P101 = P(X1, Y0, Z1), P110 = P(X1, Y1, Z0), P111 = P(X1, Y1, Z1)) of a unit rectangular hexahedron which includes an input data value (X, Y, Z where $X0 \leq X \leq X1$, $Y0 \leq Y \leq Y1$, $Z0 \leq Z \leq Z1$), wherein the interpolation processing comprises the steps of:

obtaining weight values (u', v', w'), based on the input data value (X, Y, Z), wherein the weight values are expressed as follows:

u' = INT(((X-X0)/(X1-X0))L),

v' = INT(((Y-Y0)/(Y1-Y0))L),

w' = INT(((Z-Z0)/(Z1-Z0))L),

where a value of a predetermined constant (L) is greater than each of the grid intervals (X1-X0, Y1-Y0, Z1-Z0) of the three-dimensional look-up table, and is a power of 2;

determining a relationship among the weight values (u', v', w'); and

calculating an output data value (P) for the input data value by tetrahedral interpolation using the output values for the four grid points and the weight values, based on determining result by the following equations:

when u'>v'>w', P=((L-u')P000+(u'-v')P100+(v'-w')P110+w'P111)/L,

when u'>w'=v', P=((L-u')P000+(u'-w')P100+(w'-v')P110+v'P111)/L,

when w'=u'>v', P=((L-w')P000+(w'-u')P001+(u'-v')P101+v'P111)/L,

when w'=v'=u', P=((L-w')P000+(w'-v')P001+(v'-u')P011+u'P111)/L,

when v'>w'=u', P=((L-v')P000+(v'-w')P010+(w'-u')P011+u'P111)/L,

when v'=u'>w', P=((L-v')P000+(v'-u')P010+(u'-w')P110+w'P111)/L.